

AI 300 W 058 Work Order ID 83263

April-16-12 1:35:35 PM

83263

Page 1

Item ID: D4202-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Spacer

Stop *NS2*

Start Date: 16/04/2012 Start Qty: 200.00

200

Cust Item ID:

Required Date: 30/04/2012 Req'd Qty: 200.00

200

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 12/04/16 Tooling:

Run Start *NR1*

QC: Date: SPC (Y/N):

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
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D4202	C
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100

0.00

100

Hardinge CNC LATHE SMALL

Hardinge

Memo

0.00

Hardinge CNC Lathe Small

1- Machine as per Folio FB015

FOLIO REV: 4A

DWG REV: C

*****MAKE SURE TO USE T0 MATERIAL*****

2- Deburr

200 ~~0~~ 12/05/17

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.00

Quality Control

200 ~~0~~ 12/05/17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 83263

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83263

Page 2

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Accept

N900040100

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Revision ID:

Item Name: Spacer

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Start Date: 16/04/2012 Start Qty: 200.00

200

Cust Item ID:

Required Date: 30/04/2012 Req'd Qty: 200.00

200

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC8- Inspect parts - second check	0.00							
120									
QC	Memo	0.00							
Quality Control									
130	Outsource process - Heat Treat	0.00							
130									
Outsource1	Memo	0.00							
Outsource process - Heat Treat	***HEAT TREAT AS PER DWG D4202***								
140	Receive & Inspect for Damage & Mat'l Certs	0.00							
140									
Packaging	Memo	0.00							
Packaging									

SA 12/5/17

200

~~P/D: 17010~~
P/D: 17265

~~CL 12/05/17 200~~

CL 12/06/20 20

~~P/D: 17010 (200)~~

P/D: 17010 (200)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 83263

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Page 3

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Item Name: Spacer

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200

Cust Item ID:

Required Date: 30/04/2012 Req'd Qty: 200.00

200

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC6- Inspect dimensions to drawing	0.00							
150									
QC	Memo	0.00							
Quality Control									
190	Identify as per dwg & Stock Location: <u>LG</u>	0.00							
190									
Packaging	Memo	0.00							
Packaging	***STOCK IN SKIDTUBE CELL***								
200	QC21- Final Inspection - Work Order Release	0.00							
200									
QC	Memo	0.00							
Quality Control									

Handwritten: 200x

Handwritten: 200x 12/6/13

Handwritten: 12/7/4

Handwritten: MF 12-07-03

W/O: 83263

WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

See pink NCR
12-1568

Part No: D4202-1 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: OK Date: 12/07/10

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12.6.12	150	x-bolt spacers were stress relieved to incorrect hardness Re supplier was mistake and missed at inspection	GP 12/7/4	Return to vendor for correct hardness. Re inspect	GP 12/07/04	12/05/10 12/7/10	GP 12/7/4	S 12/9/10

NOTE: Date & initial all entries

Picklist Print

April-16-12 1:35:40 PM

Page 1

Work Order ID: 83263

83263

Parent Item: D4202-1

D4202-1

Parent Item Name: Spacer

Start Date: 16/04/2012

Required Date: 30/04/2012

Start Qty: 200.00

Required Qty: 200.00

Comments: IPP REV:A NEW ISSUE 10-12-07 JLM VERIFIED:DD IPP
REV:B AS PER REV B 11-04-05 JLM VERIFIED BY:DD IPP Rev:C
11.12.19 PER DWG REV.C DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6T0.500W.058		Purchased	No			100	f	432.9560	0.35	73.68421			
M6061T6T0 500W 058										**	75.250'		SL 12/05/17
6061-T6 RD Tube .500 x.058W													

Location

Loc Qty

Loc Code

MAT014

432.956

117084

23.242

117890

0.1

119160

1.914

120935

407.7

42

75.250'

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

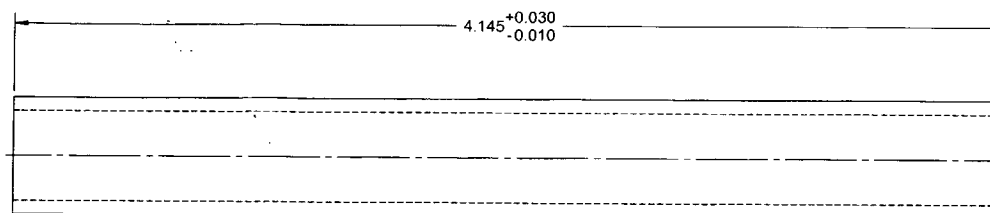
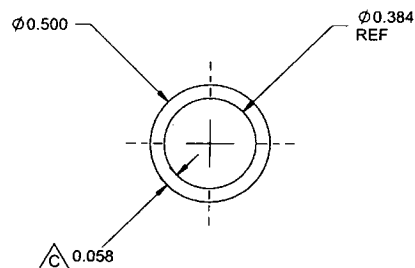
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D4202-1 SPACER

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 83263 *MLJ*
12/04/16

RELEASED
2011-12-14 *MB*

- NOTES:**
- 1) MATERIAL: 6061-T4/-T42 ALUMINUM TUBING PER WW-T-700/6, AMS 4081, OR ASTM B210 / B221 / B241
REF DART SPEC M6061T4T0.500V.058
OR
6061-T6/-T62 ALUMINUM TUBING PER WW-T-700/6, QQ-A-200/8, QQ-A-225/8, AMS 4080 / 4082, OR ASTM B210 / B221 / B241
REF DART SPEC M6061T6T0.500V.58
HEAT TREAT TO -T4/-T42 CONDITION. MIN UTS = 30 KSI (60 HREW MIN)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.03 lbs

C	6061-T4 WAS 6061-T6, 0.058 WAS 0.049	CP	11.12.13
B	0.049 WAS 0.058. REASON: FACILITATE MFG	MB	11.03.22
A	NEW ISSUE	CP	10.09.22
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>g</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	<i>g</i>		
CHECKED	<i>ASS</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>g</i>	D4202	SHEET 1 OF 1
APPROVED	<i>g</i>	TITLE	SCALE
DE APPR.	<i>g</i>	SPACER	NTS
DATE	11.12.13	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Order	Shipper	Shipping Seq.
176124	1	61433

Shipped Complete

Customer **215**
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Shipped To:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Purchase Order Number	Customer Shipper No.	Material Type	Order Date	Carrier
PO17010		AL-6061	2012/5/18	FEDEX

Quantity	Part No. / Part Name / Part Description	Pounds
200	D4202-1 Ref. 82263 D4202-1 SPACER AL-6061 CONDITION T6	7,

Container Type	# Of Containers	Container Comments
BOITE DE CARTON	1	

PACKING	
----------------	--

Quantity Shipped: 200
Pounds Shipped: 7.00
Quantity Remaining: 0
Pounds Remaining: 0.00

Quantity Shipped:	200
Pounds Shipped:	7,00

Signature: _____

Date: _____

Shipped ON: 2012/06/01



Metcor Inc.
560, boul. Arthur-Sauvé
St-Eustache (Québec) J7R 5A8
Tél : 450-473-1883
Télécopieur : 450-473-1884

Certificat de Conformité
Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
176124	1

CLIENT / customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO17010		AL-6061		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

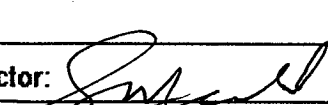

SOL ANNEAL
SINGLE AGING TO CONDITION T6

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
CONDUCTIVITY	40 - 50 %IACS	20	43 - 44 %IACS
HARDNESS	85 HREW MIN	20	95 - 97 HREW
		DURETÉE MESURÉE EN HR15TW =	81.1-82.1 HR15TW

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
200	7	D4202-1 Ref. 82263 D4202-1 SPACER AL-6061 CONDITION T6

COMMENTAIRES / comments

INSPECTEUR / inspector:

DATE: 2012-06-01

6-11-64
DEPT. OF AGRICULTURE
WASHINGTON, D.C.



U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C.

TO: DIRECTOR, AGRICULTURAL RESEARCH SERVICE
FROM: ASSISTANT SECRETARY FOR AGRICULTURAL RESEARCH
SUBJECT: [Illegible]

DATE: [Illegible]
BY: [Illegible]

1. [Illegible]
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17. [Illegible]
18. [Illegible]
19. [Illegible]
20. [Illegible]

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ

ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
177112	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
P017265		AL-6061		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

SOL-ANN-AGE

SINGLE AGING TO CONDITION T42

5/17/13

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
CONDUCTIVITY	35 - 43 %IACS	60 (60kHz)	37 - 39 %IACS
HARDNESS	60 HREW MIN	60	69.5 - 72 HREW DURETEE MESUREE EN HR15TW = 67.5-68.8 HR15TW

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
600	20	D4202-1 SPACER (200) 83263 (400) 84763 <i>(200)</i> CONTENANT : 1 BOITE DE CARTON

Operation	Temp. spécifiée Specified Temp	Temps de trempage Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
1.00 CONT. INIT.										
2.00 Degrease										
3.00 PREPARING	COMPTAGE									
4.00 PREHEAT 1	529°C	0:30	air			701				
5.00 WATER TEN										

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ

ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
177112	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

Operation	Temp. spécifiée Specified Temp	Temps de trempé Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
6.00 SOL ANNEA	529°C	0:35 +/- 5 min	AIR		WATER 40MAX	701				
7.00 QUENCHDE										
8.00 WATER TEN										
9.00 PREPARING										
10.00 AGE HARDE		96:00								
11.00 HARDN INS										
12.00 CONDUCT										
13.00 FINAL INSP							06-27-2012			06-27-2012

COMMENTAIRES / comments

APPROUVÉ par / Approved by:



DATE: 2012-06-28

/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client. / We certify that all the information on this report is exact and in accordance with the order requirements.



Metcor Inc.
560, boul. Arthur-Sauvé
Québec, Québec G1P 6A8
Tél: 514 441-1111
Fax: 514 441-1112
50 491-5498
50 491-6451

Certificat de conformité
Certificate of compliance

BON DE TRAVAIL order	CHARGEMENT load
177112	1

CLIENT / customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PD17285		AL-8081		

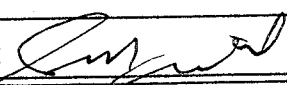
SPÉCIFICATIONS DU PROCÉDÉ
processing specifications

SOL-ANNAGE
SINGLE AGING TO CONDITION T42

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
CONDUCTIVITY	35 - 43 %IACS	80	37 - 39 %IACS
HARDNESS	80 HREW MIN	80	69.5 - 72 HREW
DURETÉE MESURÉE EN HR15TW = 67.5-68.8 HR15TW			

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
600	20	D4202-1 SPACER (200) 83283 (400) 84783 CONTENANT : 1 BOITE DE CARTON

COMMENTAIRES / comments

INSPECTEUR / inspector: 



DATE: 2012-06-27